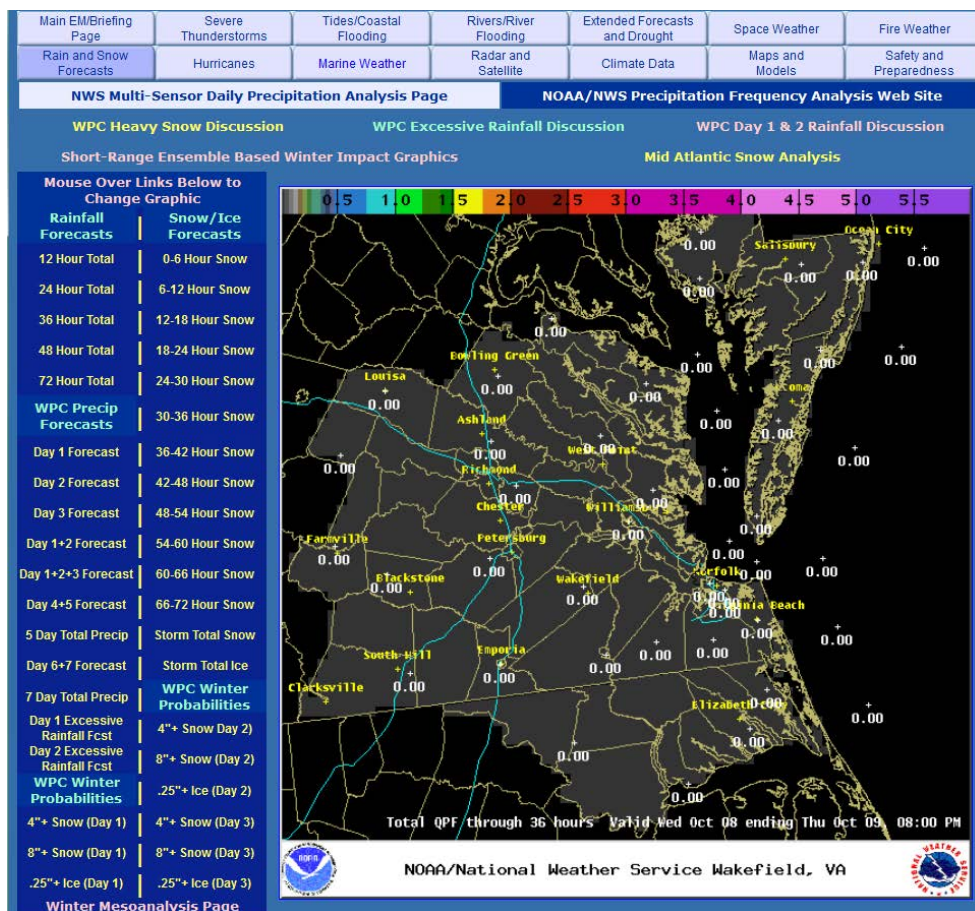


3 – The Rain and Snow Forecasts Page

NOTE: *This page utilizes mouseover capabilities, and is compatible with smartphones and tablets.*



Our Rain and Snow Forecasts page can be utilized in much the same way as the Severe Thunderstorms page. At left is the winter version of this page.

Between April and mid-November, only the left column of the links table (i.e. rainfall forecasts) will be seen.

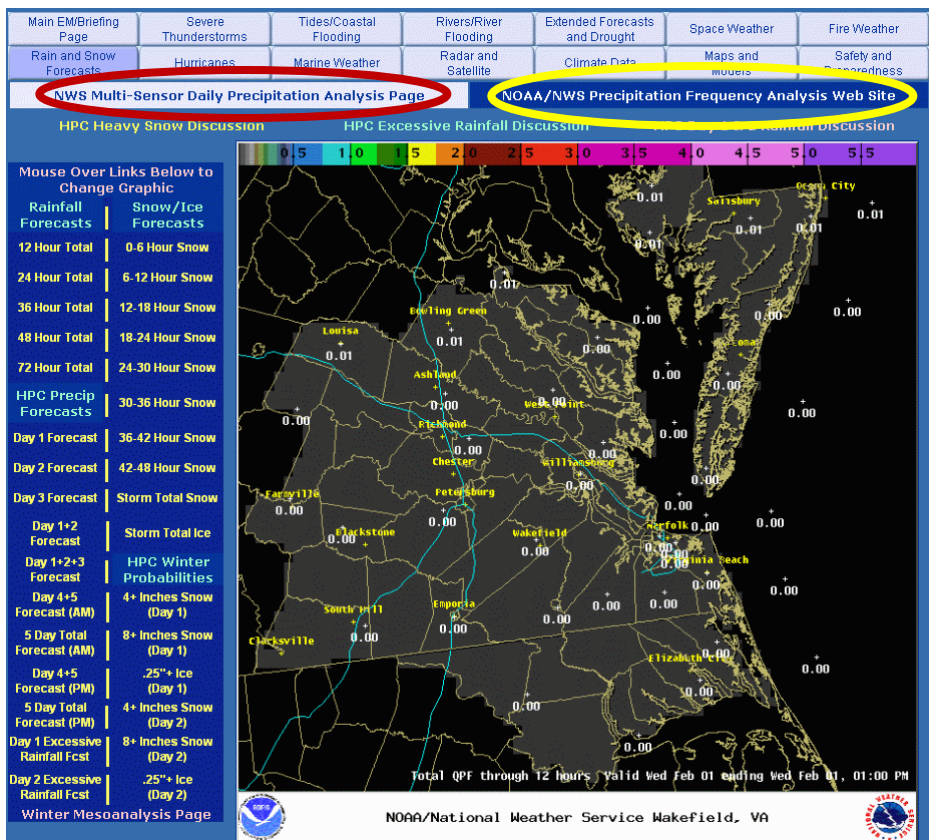
There are 2 types of precip forecasts on this page. The **first type** are forecasts generated **here at NWS Wakefield**. **Second** are the **Weather Prediction Center (WPC) national forecasts of precipitation, snow or ice**. The snow/ice probability thresholds used are defined as follows: **SLGT** - 10% to 40% chance of occurrence within the outlined area. **MODERATE (MDT)** - 40% to 70% chance of occurrence within

the outlined area. **HIGH** - 70% chance or greater of occurrence within the outlined area. Associated WPC discussions are linked above the graphics display. The timeframes for the various graphics are fairly self-explanatory, and are labeled on both our local and WPC precipitation forecasts. However, there is an important difference between our locally produced rain and snow forecasts.

The **12 through 72 hour rainfall forecasts are running totals** through the 72 hour period. The **0-6 hour through 66-72 hour snowfall forecasts are individual 6 hour accumulations**. From a snowfall perspective, this gives the user an idea of not only when the wintry precipitation will begin, but in what time the heaviest snow is expected. Snowfall and ice accumulation totals for the entire storm can be found in the Storm Total Ice, and Storm Total Snow links.

The [Winter Mesoanalysis Page](#) link (bottom of the precip graphics table) will take you to a page with SPC winter weather parameters overlaid on the same regional section as the Severe Mesoanalysis Page discussed in the Severe Thunderstorms tab discussion (see Appendix A of this document, or the last 2 pages of the Rain and Snow Forecasts Page Users Guide).

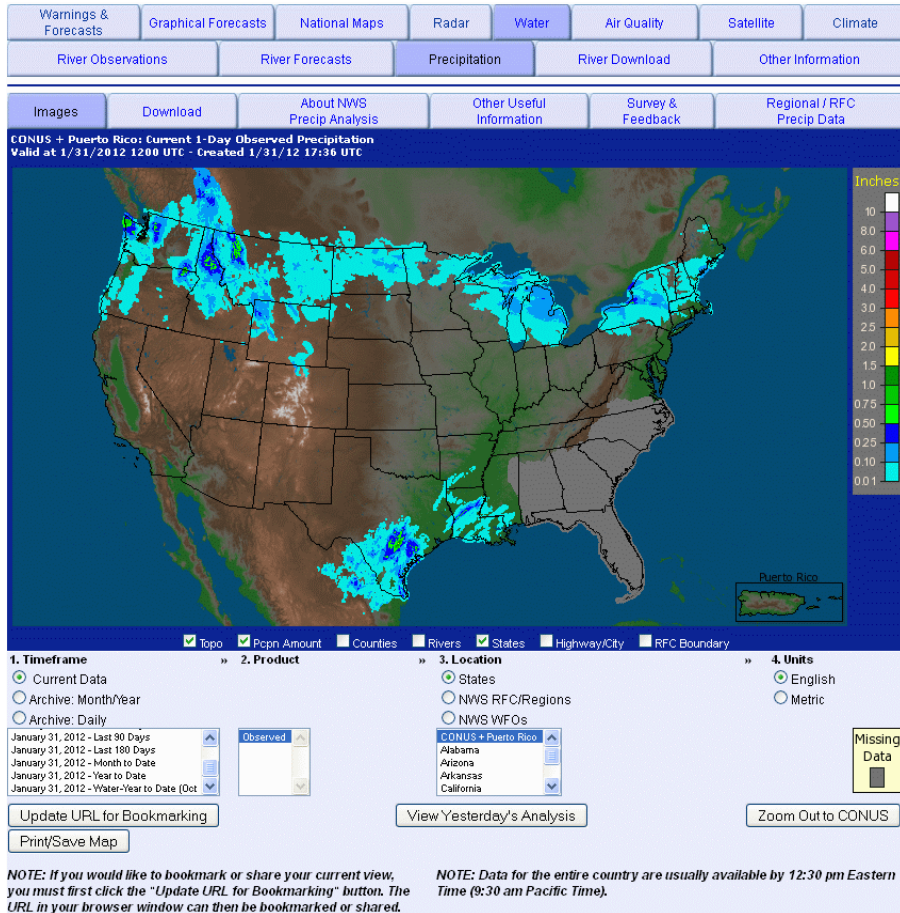
Two additional links above the graphics display provide some very useful information. These are discussed on the next page.



The links to the **NWS Multi-Sensor Daily Precipitation Analysis Page** (highlighted by the red oval), and the **NOAA/NWS Precipitation Frequency Analysis Web Site** (highlighted by the yellow oval), provide very useful information about past precipitation, and the frequency of precipitation events of certain magnitudes, respectively.

Daily Precipitation Analysis

The default map display shows precipitation across the U.S. in the last 24 hours, with the national data being available by noon each day. This graphic is derived from a combination of rain gauge measurements and radar based rainfall. The display can be changed to any state by selecting the state from the menu under **3. Location** located below the map. In addition, different products (departure from normal, percent of normal) can be obtained by selecting a different time frame (last 7 days to water year to date) under **1. Timeframe**.



NOTE: If you would like to bookmark or share your current view, you must first click the "Update URL for Bookmarking" button. The URL in your browser window can then be bookmarked or shared.

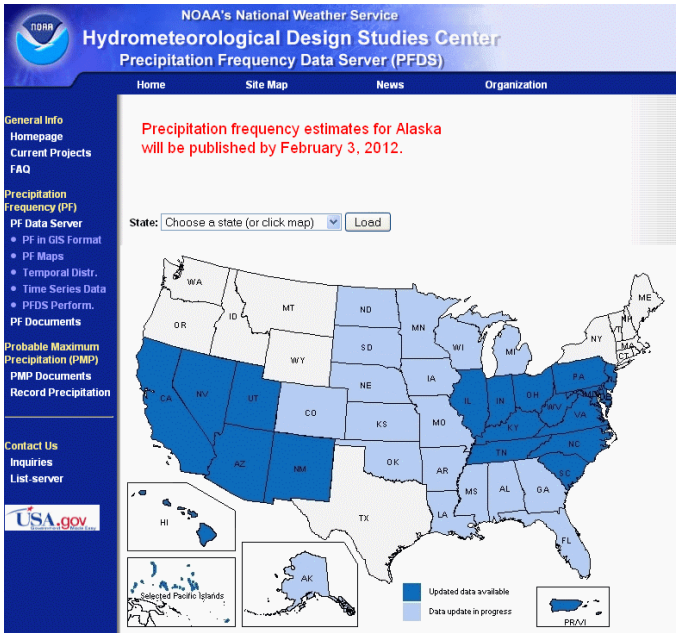
NOTE: Data for the entire country are usually available by 12:30 pm Eastern Time (9:30 am Pacific Time).

Precipitation Frequency Analysis

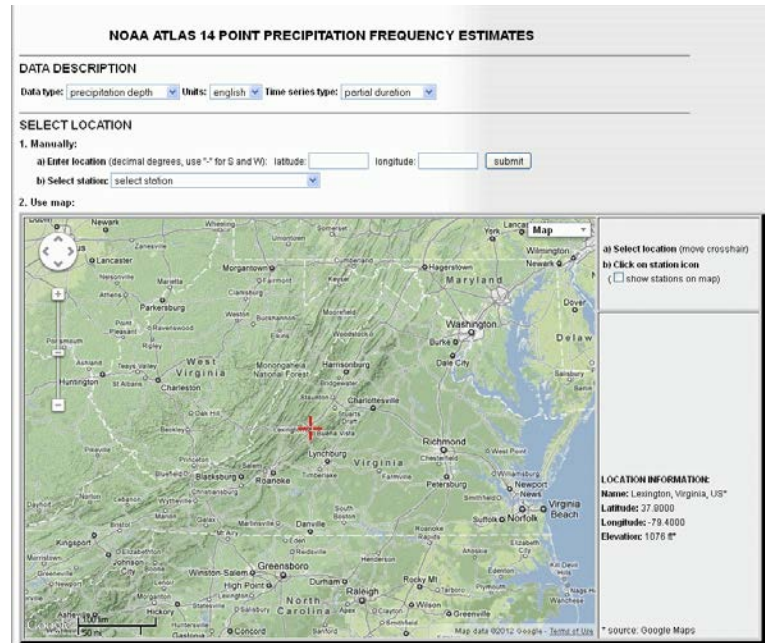
A precipitation frequency analysis can provide useful information to planners at the state or local level. The

analysis shows the return period/interval (in years) for a given amount of precipitation for durations ranging from 5 minutes to 60 days. Click on the Precipitation Frequency Analysis link, and the page to the left appears in a new window.

Click on any state highlighted in blue, and the new map looks like this:



To obtain a precipitation frequency analysis for a given location, simply drag the red cross to the desired location, and the map will automatically re-center to that location, and a ***precipitation frequency analysis will appear below the map*** in a table similar to the one below:



PF tabular

PF graphical

Supplementary information

Print Page

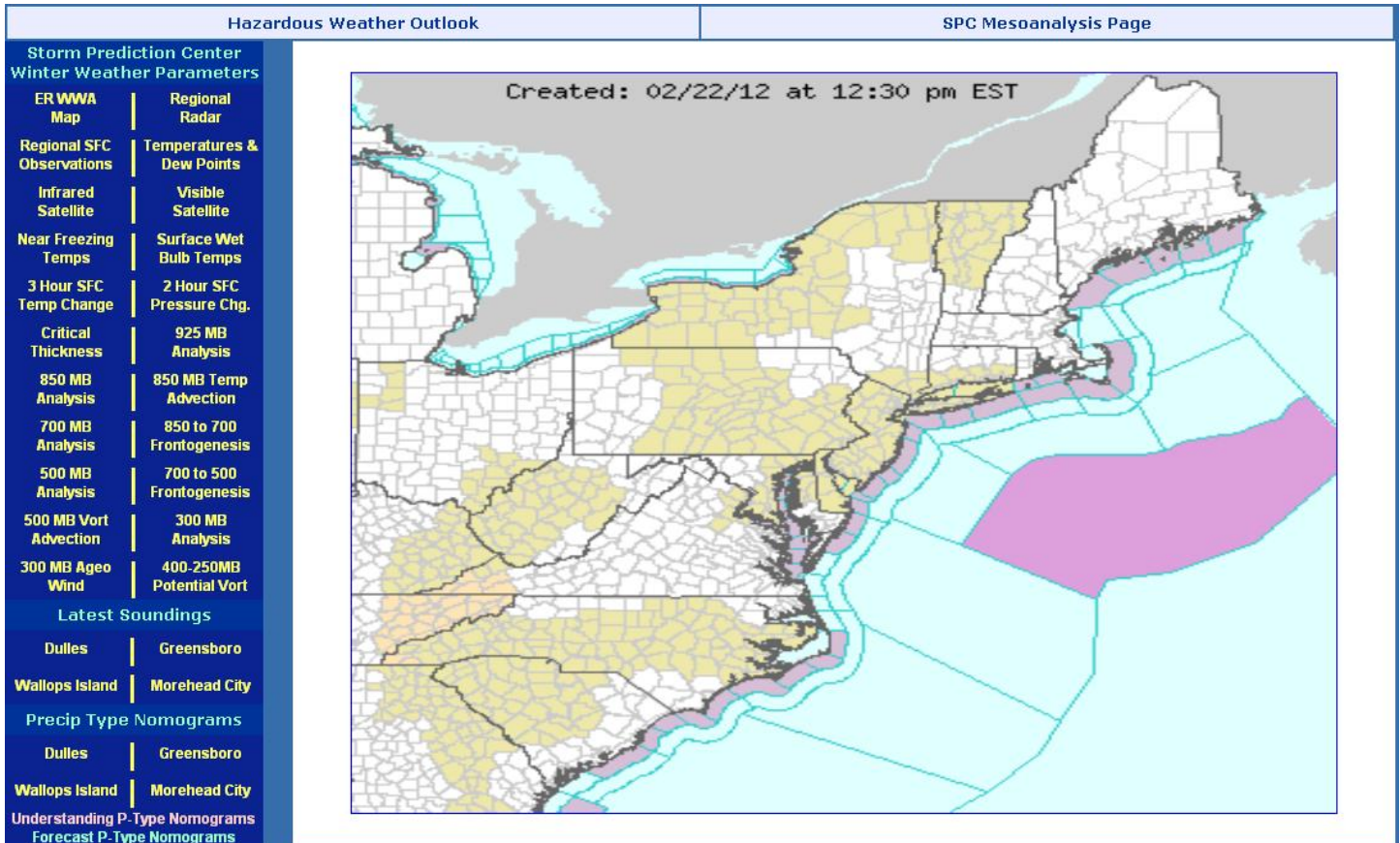
PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)¹

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5 min	0.396 (0.357 to 0.442)	0.468 (0.422 to 0.521)	0.540 (0.487 to 0.602)	0.611 (0.549 to 0.680)	0.687 (0.614 to 0.784)	0.749 (0.667 to 0.832)	0.807 (0.715 to 0.887)	0.862 (0.761 to 0.958)	0.929 (0.815 to 1.03)	0.988 (0.858 to 1.1)
	0.632 (0.570 to 0.65)	0.748 (0.675 to 0.833)	0.865 (0.780 to 0.964)	0.977 (0.871 to 1.05)	1.09 (0.979 to 1.22)	1.19 (1.06 to 1.32)	1.28 (1.14 to 1.43)	1.37 (1.21 to 1.52)	1.47 (1.29 to 1.64)	1.56 (1.35 to 1.73)
15 min	0.790 (0.712 to 0.882)	0.941 (0.848 to 1.05)	1.09 (0.987 to 1.22)	1.24 (1.11 to 1.38)	1.39 (1.24 to 1.54)	1.51 (1.34 to 1.68)	1.62 (1.44 to 1.80)	1.73 (1.52 to 1.92)	1.85 (1.62 to 2.08)	1.95 (1.70 to 2.17)
	1.08 (0.976 to 1.21)	1.30 (1.17 to 1.45)	1.55 (1.40 to 1.73)	1.79 (1.61 to 1.98)	2.06 (1.84 to 2.29)	2.27 (2.03 to 2.53)	2.48 (2.20 to 2.76)	2.69 (2.37 to 2.98)	2.94 (2.58 to 3.28)	3.16 (2.75 to 3.62)
30 min	1.35 (1.22 to 1.51)	1.65 (1.47 to 1.81)	1.99 (1.80 to 2.22)	2.33 (2.09 to 2.60)	2.74 (2.43 to 3.04)	3.06 (2.73 to 3.42)	3.42 (3.03 to 3.80)	3.72 (3.32 to 4.18)	4.22 (3.70 to 4.74)	4.62 (4.01 to 5.44)
	1.60 (1.44 to 1.79)	1.93 (1.74 to 2.15)	2.39 (2.15 to 2.67)	2.84 (2.54 to 3.16)	3.40 (3.02 to 3.77)	3.88 (3.43 to 4.31)	4.37 (3.85 to 4.85)	4.89 (4.28 to 5.43)	5.61 (4.86 to 6.22)	6.23 (5.36 to 7.01)
2 hr	1.72 (1.54 to 1.94)	2.07 (1.85 to 2.33)	2.52 (2.20 to 2.89)	3.06 (2.73 to 3.43)	3.69 (3.27 to 4.12)	4.24 (3.74 to 4.73)	4.82 (4.21 to 5.37)	5.42 (4.71 to 6.04)	6.28 (5.39 to 6.98)	7.03 (5.89 to 8.37)
	2.49 (1.85 to 3.33)	2.88 (2.19 to 3.60)	3.09 (2.43 to 3.64)	3.68 (3.04 to 4.35)	4.46 (3.85 to 5.02)	5.17 (4.53 to 5.77)	5.91 (5.18 to 6.61)	6.70 (5.78 to 7.40)	7.83 (6.64 to 7.95)	8.85 (7.44 to 8.88)
6 hr	2.45 (2.19 to 2.79)	2.93 (2.61 to 3.24)	3.67 (3.29 to 4.01)	4.41 (3.89 to 5.00)	5.40 (4.76 to 6.11)	6.30 (5.47 to 7.12)	7.27 (6.29 to 8.24)	8.33 (7.09 to 9.39)	9.86 (8.26 to 11.4)	11.3 (9.30 to 13.4)
	2.84 (2.60 to 3.13)	3.45 (3.17 to 3.80)	4.44 (4.07 to 4.90)	5.58 (4.82 to 6.52)	6.52 (5.60 to 7.61)	7.57 (6.81 to 8.32)	8.72 (7.78 to 9.68)	9.99 (8.83 to 11.0)	11.9 (10.3 to 13.5)	13.4 (11.6 to 14.8)
24 hr	3.29 (3.02 to 3.53)	3.99 (3.60 to 4.4)	5.11 (4.69 to 5.62)	6.55 (5.52 to 7.64)	7.44 (6.74 to 8.17)	8.62 (7.59 to 9.7)	9.90 (8.84 to 10.9)	11.3 (10.0 to 12.5)	13.4 (11.7 to 14.8)	15.1 (13.1 to 16.5)
	3.49 (3.20 to 3.84)	4.23 (3.86 to 4.63)	5.39 (4.95 to 5.83)	6.37 (5.82 to 6.9)	7.78 (7.07 to 8.58)	8.98 (8.11 to 9.85)	10.31 (9.20 to 11.3)	11.7 (10.4 to 12.8)	13.8 (12.1 to 15.2)	15.6 (13.5 to 17.2)
3-day	3.69 (3.29 to 0.5)	4.46 (4.11 to 4.91)	5.68 (5.26 to 6.22)	6.68 (6.12 to 7.22)	8.13 (7.40 to 9.00)	9.34 (8.46 to 10.3)	10.7 (9.57 to 11.7)	12.1 (10.8 to 13.2)	14.2 (12.5 to 15.6)	16.0 (13.9 to 17.6)
	4.29 (3.54 to 4.88)	5.16 (4.76 to 5.6)	6.47 (5.96 to 7.07)	7.55 (6.84 to 8.23)	9.09 (8.31 to 9.91)	10.4 (9.42 to 11.3)	11.7 (10.6 to 12.8)	13.2 (11.8 to 14.4)	15.3 (13.6 to 16.8)	17.0 (14.5 to 18.7)
7-day	4.90 (4.55 to 5.3)	5.08 (5.40 to 6.9)	7.20 (6.74 to 7.90)	8.41 (7.79 to 9.1)	10.0 (9.20 to 10.8)	11.3 (10.4 to 12.3)	12.7 (11.5 to 13.9)	14.2 (12.8 to 15.4)	16.2 (14.5 to 17.7)	17.9 (15.8 to 19.6)
	6.63 (6.19 to 7									

Appendix A – The Winter Mesoanalysis Page

NOTE: *This page utilizes mouseover capabilities, and is compatible with smartphones and tablets.*

The Severe Thunderstorm Mesoanalysis page is designed to provide a real-time picture of thunderstorm and/or severe thunderstorm potential. The graphics on this page are mostly from the SPC Mesoanalysis Page (linked above the graphics), utilizing the Mid Atlantic sector. Although many of the parameters are well known to meteorologists, others require some explanation (see descriptions below graphic).



Frontogenesis – The generation or intensification of a front. It occurs when warm air converges onto colder air, and the horizontal temperature gradient amplifies by at least an order of magnitude.

Advection – Transport of an atmospheric property by the wind. Most often used to describe increases or decreases in temperature or moisture.

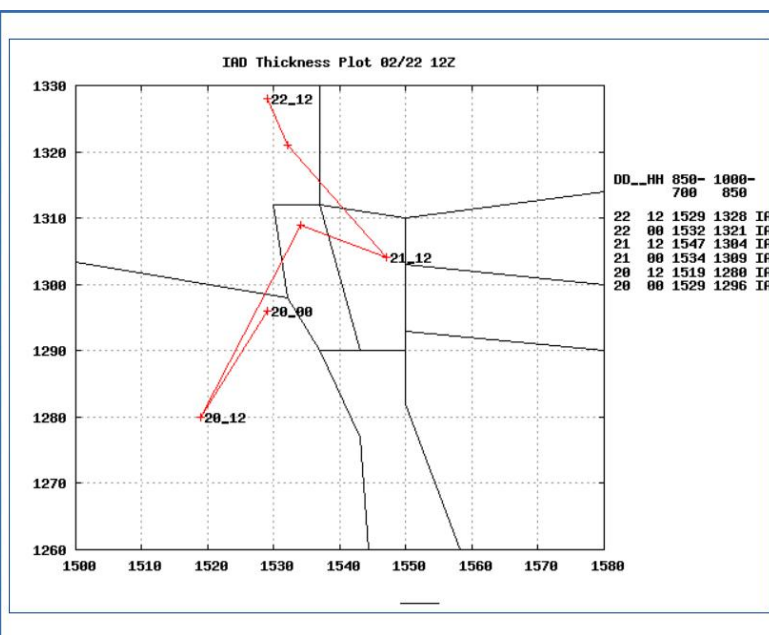
Potential Vort (Potential Vorticity) – This plays an important role in the generation of vorticity (cyclonic turning in the atmosphere) in cyclogenesis, especially along the polar front. It is also very useful in tracing intrusions of stratospheric air deep into the troposphere in the vicinity of jet streaks.

Appendix A1 – The Precip Type Nomogram Page

NOTE: This page utilizes mouseover capabilities, and is compatible with smartphones and tablets.

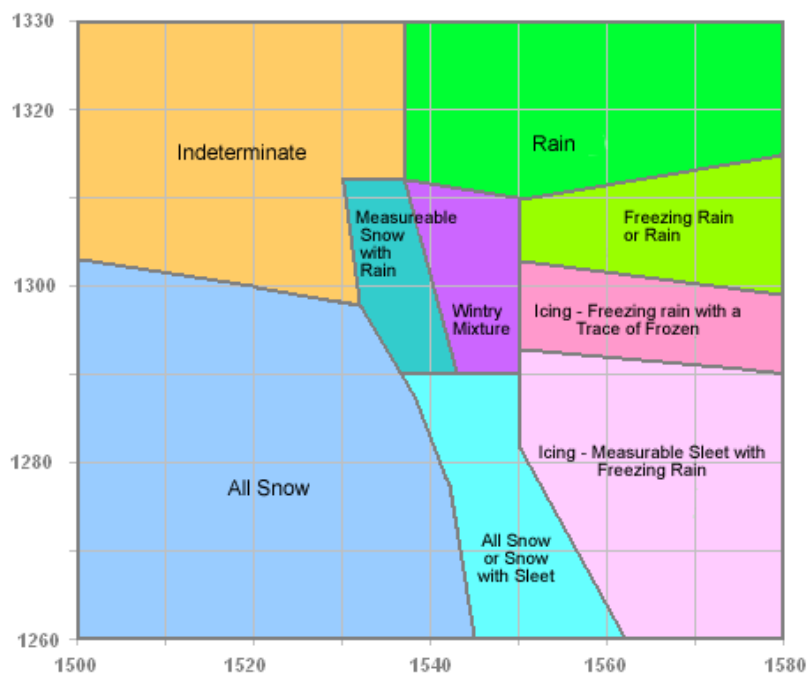
Precipitation type nomograms can be a quick way to determine precipitation type, or the evolution of precipitation types, during a winter weather event. This page shows nomograms for weather balloon observations from Dulles Airport, VA, Greensboro, NC, Morehead City, NC and Wallops Island, VA. In addition, forecast precipitation type

Understanding P-Type Nomograms				
Observed Precip Type Nomograms				
IAD	GSO	WAL	MHX	
Forecast Precip Type Nomograms				
Courtesy WFO Raleigh				
Charlottesville VA				
RUC	WRF	NAM	SREF	GFS
Dulles Airport VA				
RUC	WRF	NAM	SREF	GFS
Salisbury MD				
RUC	WRF	NAM	SREF	GFS
Farmville VA				
RUC	WRF	NAM	SREF	GFS
Richmond VA				
RUC	WRF	NAM	SREF	GFS
Danville VA				
RUC	WRF	NAM	SREF	GFS
Raleigh NC				
RUC	WRF	NAM	SREF	GFS
Roanoke Rapids NC				
RUC	WRF	NAM	SREF	GFS
Norfolk VA				
RUC	WRF	NAM	SREF	GFS
Elizabeth City NC				
RUC	WRF	NAM	SREF	GFS



nomograms for about a dozen locations in and around the NWS Wakefield area of responsibility are available for the following models – RUC (Rapid Update Cycle); WRF (Weather Research and Forecast); NAM; SREF (Short-Range Ensemble); GFS; and GEM (Canadian). These nomograms are all available courtesy of WFO Raleigh ,NC.

P-Type Categories



The image at left is a legend for understanding precip type nomograms.